

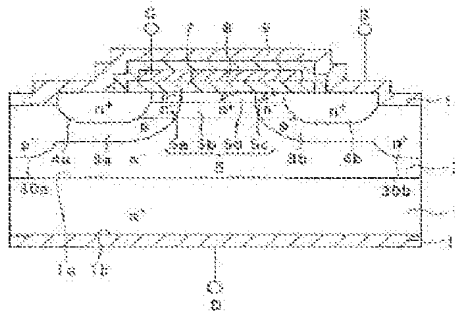


SILICON CARBIDE SEMICONDUCTOR DEVICE AND FABRICATION METHOD THEREOF**Patent number:** JP2001094096 (A)**Publication date:** 2001-04-06**Inventor(s):** OKUNO HIDEKAZU; AMANO SHINJI**Applicant(s):** DENSO CORP**Classification:****- international:** *H01L21/04; H01L29/12; H01L29/78; H01L29/24; H01L29/417; H01L21/02; H01L29/02; H01L29/66; H01L29/40; (IPC1-7): H01L29/78***- european:** *H01L21/04H20B; H01L29/78C***Application number:** JP19990267529 19990921**Priority number(s):** JP19990267529 19990921**Also published as:** JP4192353 (B2) US6455892 (B1)**Abstract of JP 2001094096 (A)**

PROBLEM TO BE SOLVED: To decrease ON resistance furthermore in a storage mode MOSFET.

SOLUTION: A surface channel layer 5 comprises n-type channel layers 5a, 5b formed to touch the surface parts of p-type base regions 3a, 3b and an n-type epi layer 2, and p-type channel layers 5c, 5d formed on the n-type channel layers. Since a channel is formed in the n-type channel layer located beneath the p-type channel layer touching a gate oxide film 7 and a current can be fed thereto when a PN junction is formed in the surface channel layer 5, a channel can be formed regardless of the roughness or residual defect of the interface (MOS interface) between the gate oxide film 7 and the surface channel layer 5. Consequently, mobility of channel can be enhanced while decreasing ON resistance.



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(54) **SILICON CARBIDE SEMICONDUCTOR DEVICE  
AND FABRICATION METHOD THEREOF**

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